

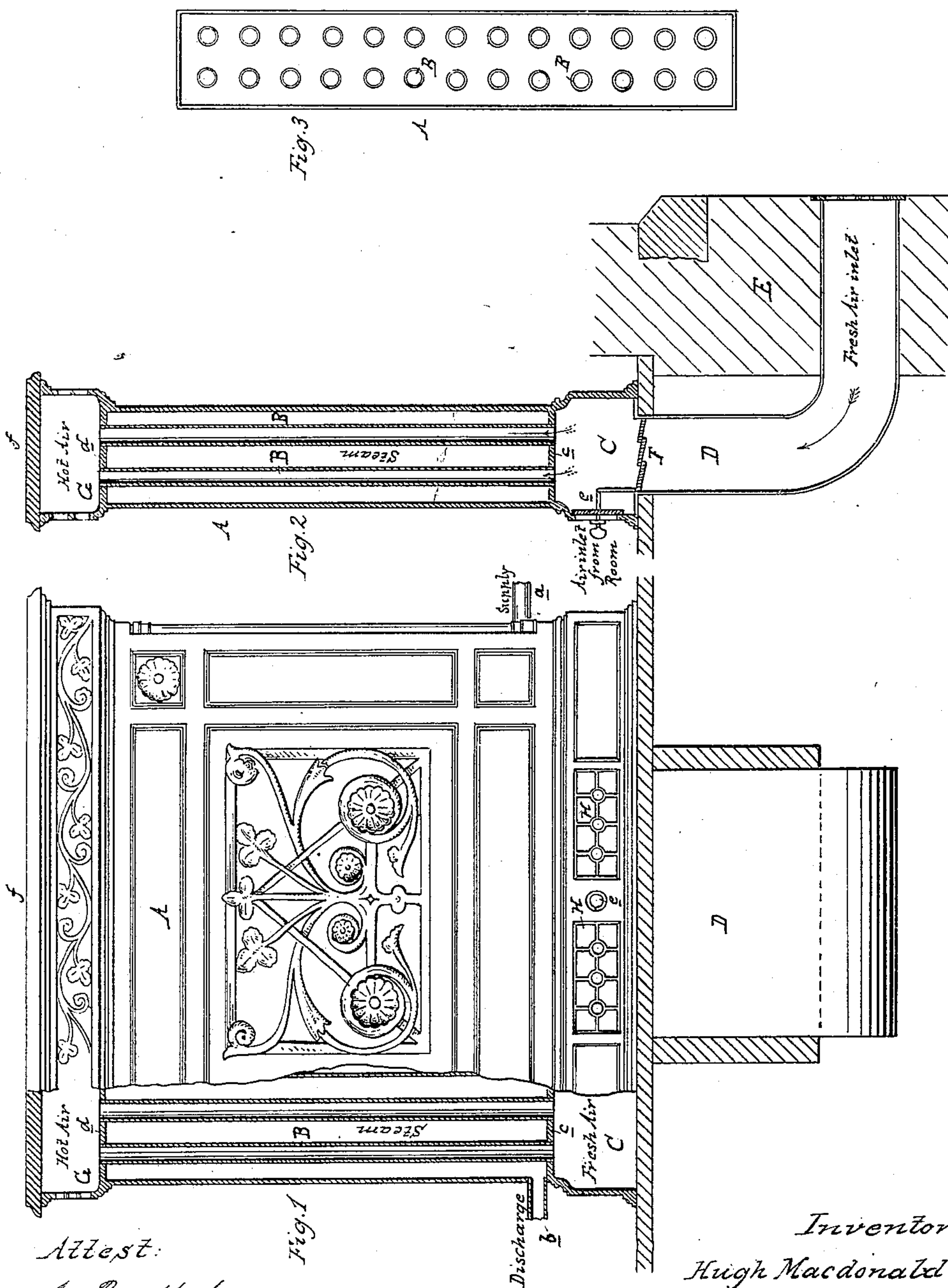
(No Model.)

H. MACDONALD.

STEAM RADIATOR.

No. 271,723.

Patented Feb. 6, 1883.



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UNITED STATES PATENT OFFICE.

HUGH MACDONALD, OF DETROIT, MICHIGAN.

STEAM-RADIATOR.

SPECIFICATION forming part of Letters Patent No. 271,723; dated February 6, 1883.

Application filed September 16, 1882. (No model.)

To all whom it may concern:

Be it known that I, HUGH MACDONALD, of Detroit, in the county of Wayne and State of Michigan, have invented new and useful Improvements in Steam-Radiators; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, which form a part of this specification.

The nature of this invention relates to certain new and useful improvements in the construction and operation of steam-radiators, by means of which a perfect circulation of fresh air is discharged in a heated condition into the room, such air being taken from outside, and by means of which, also, the colder stratum of air always found near the floor is heated at will and again discharged into the room.

The invention consists in the peculiar construction of parts and their various combinations, as more fully hereinafter described.

Figure 1 is a front elevation of my device with a portion of the shell broken out. Fig. 2 is a vertical cross-section of the same, showing its connection with the fresh-air inlet. Fig. 3 is a plan with the top removed.

In the accompanying drawings, which form a part of this specification, A represents a metallic box of any suitable form or size, the outer faces of which may be ornamented in any of the known ways, such ornamentation being designed to the style of the finish of the room in which the device is situated. This box is steam-tight, and provided with an inlet-pipe, *a*, designed to be attached to any suitable source of steam-supply, and with an outlet-pipe, *b*, to discharge the water of condensation, and this pipe is designed to be connected with any proper drip. The bottom *c* of this box is perforated as well as the top *d*, the perforations in each being coincident to receive the pipes B, which are secured in the perforations in any of the known ways of making tight joints in such connections.

C is an inclosed chamber below the bottom of the box A, and this chamber is designed to connect with an air-inlet, D, the opposite end of which is carried through the wall E and opens into the outside air. A valve, F, is arranged to open or close the upper end of the air-inlet pipe by means of a rod, *e*, which projects through the front wall of the chamber;

or it may be arranged in any other position, so that the damper or valve may be operated from outside the device. G is another chamber upon top of the steam-box A, and into this chamber the pipes B open, affording communication through the steam-box between the chambers C and D. The side walls of this upper chamber, G, are ornamentally perforated to allow the air to escape into the room, and the top *f* of this chamber may be an imperforate or a perforate top, as may be desired.

H is an inlet-register, situated in one of the walls of the chamber C, and this register may be so arranged as to be closed or opened, as preferred.

In operation the steam-box A is filled with steam, heat being directly radiated into the room through the walls of said box, while fresh air admitted through the inlet passes up through the pipes B, located within the steam-chamber, and, becoming highly heated in the passage through such pipes, is discharged into the upper chamber, and thence into the room, thereby furnishing a constant and steady supply of fresh warm air. The colder stratum of air near the floor enters through the register in the bottom chamber, and follows the same course as that described as being followed by the fresh-air currents, and by this means a very even temperature of the room is obtained. By this construction and operation of a steam-radiator a very perfect device is obtained for heating and ventilating at a minimum expenditure of fuel.

The valve F, it will be observed, is arranged below the register H, and is so formed that when partly open a certain percentage of the fresh cold air is deflected toward and through the register when the register is open. This construction is useful when it is desired to renovate or cool the atmosphere of an apartment quickly, and in any event both valve and register are separately and independently under the ready supervision of the operator.

What I claim as my invention is—

1. The steam-radiator herein described, consisting of the steam-tight chamber A *a b*, arranged around a series of vertical pipes, B, connecting a fresh-air chamber, C, below with an open hot-air chamber, G, above the register H, fresh-air pipe D, the valve F in such fresh-air inlet, arranged below the register H, and

the rod *e*, arranged adjacent to the means for operating the register, as specified.

2. The steam-radiator herein described, consisting of the steam-chamber *A a b*, fresh-air
5 chamber *C*, having register *H*, open hot-air chamber *G*, and pipes *B*, the fresh-air inlet *D* having valve *F* arranged below the register,

and adapted, when partly open, to deflect the incoming fresh air through such register, as set forth.

HUGH MACDONALD.

Witnesses:

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E. SCULLY.